FASTEC
Software for Production

We digitalize factories

Success in digital production thanks to MES

User Report

Unilever Deutschland

Produktions GmbH & Co. OHG, Plant in Heilbronn, Germany

Unilever

Initial Situation

Regardless of whether it is a side, salad dressings, soups, gravies or ready-made meals: As the largest Unilever brand, Knorr is represented in more than 100 counties worldwide. In Germany alone, there are more than one billion Knorr packages sold in one year only.

It all began in 1838: Carl Heinrich Knorr founded the company in Heilbronn, starting off as a factory supplying spices. 150 years later, the name is well-established and stands for fast and tasty soups, it is a synonym for convenience foods. Since early 2013, the production at the Unilever plant in Heilbronn has been supported by MES FASTEC 4 PRO. The Plant in Heilbronn is the birthplace of the largest Unilever brand, namely: Knorr. Here, soups, sauces or gravy thickener, salad dressings and basic products are produced and exported to more than 40 countries. The MES solution FASTEC 4 PRO was initially implemented for the machine data acquisition and evaluation.

Unilever

"The MDA module is our basic tool for determining losses in packaging lines, and thus it is an essential tool for our production."

Gerhard Weinert
Business process management manufacturing
Unilever, plant in Heilbronn

Reducing Losses

FASTEC 4 PRO Replaces the Existing MES

Before the Implementation

Even before the FASTEC solution, the Unilever plant in Heilbronn already became acquainted with using a Manufacturing Execution System.

Gerhard Weinert, business process management manufacturing at the Unilever plant in Heilbronn, explains:

"Before the implementation of FASTEC 4 PRO we have worked with the MES of a competitor for approximately 20 years. Still, we decided in favor of a change of system. One reason was that our previously used system was outdated – the acquisition of a new MES outweighed an update of the old system. Another factor was that in the standard MES, our company-specific requirements could not be met. We immediately had a good feeling about FASTEC to successfully implement the system according to our requirements."

Implementation in 2013

The first implementation of FASTEC 4 PRO took place in 2013, in which initially, only a few functional extensions were made. There were several reasons for this:

- On the one hand, already existing interfaces to the ERP system SAP from which order header data derive could be adopted.
- On the other hand, the new system is required to be actively used as fast and cost-efficient as possible – a requirement that FASTEC lives up to as requested.

Following the Implementation

The system has changed drastically due to the active use:

"In the meantime, our system constantly developed in more than ten project steps as new ideas arose thanks to the close cooperation. Throughout this whole process we have kept close contact to one single FASTEC employee only – a project engineer who has been there right from the start and meets our requirements. This way, we were able to record a very efficient progression of the project on both sides."

Heiko Schnepf
Business application support manufacturing
Unilever, plant in Heilbronn

Efficient Project Schedule

Efficient Project Schedule

- **Requirements of Employee Groups**

Machine operators
on the lines appreciate the clear arrangement of information and easy handling at the terminals.

Areas Actively Working With Reports and Evaluations
You can create evaluations specifically tailored to your needs and, if required, they can be saved in Excel. The individual evaluations can be customized by each user and saved as templates.

FASTEC 4 PRO System Support
The FASTEC 4 PRO monitoring module is essential for the shift handover in each change of shift.
During these changes of shift, technical maintenance, team leaders who are responsible for organizing multiple lines, as well as the master craftsman get together. In case of a change of shift on a new line, a project engineer is also present. Here, the system provides essential information for the meeting.

- **OEE Evaluation According to Unilever's Standards**

In order to attain an even more detailed evaluation of occurring states, the OEE evaluation included in the FASTEC standard has been expanded according to Unilever's needs.

Additional status categories can now be defined in the FASTEC 4 PRO Office Client (e.g. different loss categories).

The drill-down feature allows these categories to be analyzed in detail at every level. Additionally, the evaluation includes a tabular report of shift performances.

All values can also be displayed in live monitoring.

Additional status categories can be defined and evaluated in the Office Client.

Thanks to the drill-down feature, these categories can be viewed and analyzed at every level.

Involving Employees

Production Line With Single Machine OEE

Machine data are collected from all packaging lines via I/O modules. Usually, a packaging line consists of two stations with a filling machine and an end-of-line packaging machine as its main unit. In addition, a scale is also integrated into the line.

Deviating from the standard lines, there are also lines in which additional units such as a depalletizer, an elevator and labeling systems are integrated.

Even though a line is composed of several units, there is usually only one OEE value for the entire line. If for each station the OEE value was to be collected separately, this would require considerable effort to implement, because each unit would have to be created and booked as a separate workplace. In order to get an evaluation based on each unit without a greater effort, line and station statuses were developed. Occurring downtimes are thus not only assigned to the line, but also partly assigned to individual stations directly.

The Following Two Examples Illustrate the Solution:

A technical malfunction at the end-of-line packaging machines occurs and is booked as “packer, electrical.“ In this case, the disturbance can clearly be assigned to this particular line station. It is more difficult to clearly assign the states “setup“ or “interruption without cause“ (IC) to a specific station. Here, Unilever makes use of empirical values: A percentage is assigned to each station, which is determined by measuring the proportionate set-up times of the individual units or the frequency of how often a unit causes disturbances. If such a state occurs, it is proportionately assigned to each station.

“From the first presentation of FASTEC in our house, we immediately liked the design of the program – the user interface and the design of the layouts – which impressed us.“

Gerhard Weinert
Business process management manufacturing
Unilever, plant in Heilbronn

Detailed Evaluations Per Machine

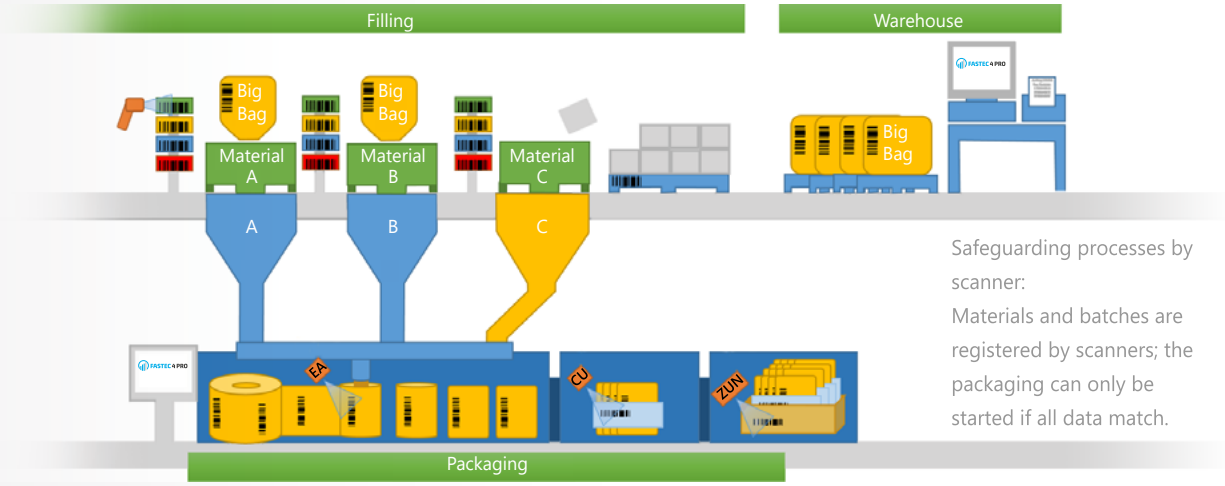
Safeguarding Processes by Scanner

Product safety is a top priority not only for Unilever, but for every food manufacturer.

"We sell quality products – that is what both names, Knorr and Unilever, stand for. We therefore make use of all our resources to guarantee the highest level of quality, which is why various tests to safeguard the production processes are fully integrated at Unilever."

Gerhard Weinert
Business process management manufacturing
Unilever, plant in Heilbronn

Stefan Ehlenbröker, who is, amongst other things, a project engineer at FASTEC and in charge of the implementation of the following sub-project, reports:
"A key element to safeguard the production processes are scanners which have been integrated into the packaging line. After an order is registered in FASTEC 4 PRO, the product data are directly transferred to the scanner, therefore, used material and target data are continuously compared. If the data do not match, a mismatch occurs and the line is stopped immediately. Additionally, this information is evaluated by FASTEC 4 PRO in statistics; this way, it is possible to read out how many packages were scanned in total or whether there was a mismatch."



Safeguarding processes by scanner:
Materials and batches are registered by scanners; the packaging can only be started if all data match.

Product Safety is a Top Priority

Warehouse Management System and Inline Printing

Apart from the scanners, Unilever has integrated two further systems for safeguarding: A warehouse management system (WMS) for the filling material and two inline printing systems which operate the labeling machines and printers along the lines. Thus, interfaces were implemented for both systems.

These test methods are also based on a comparison of information. Thus, FASTEC 4 PRO transmits which product is packed on which line to the WMS, so that it can be assured that the correct filling material is used. In a further step, the inline printing system compares the product data which it receives from FASTEC 4 PRO. If there is a mismatch in terms of differing information, the line is stopped directly.

"Moreover, the multiple testing and safeguarding by different systems is of paramount importance and in line with our business continuity management. This way, the vital information is always and instantly available in the systems, for example in case of a network failure. In such a case, production does not need to be stopped."

Gerhard Weinert
Business process management manufacturing
Unilever, plant in Heilbronn

Additional Test Stations

No Lack of Ideas for Follow-Up Projects

Keeping Track of Short Downtimes

One of the declared aims of the Unilever team in Heilbronn is to further reduce downtimes. In order to achieve this aim, it is necessary to record and analyze the causes of downtimes in more detail and even more precisely.

"We record up to two or three minutes of short downtimes, which can be caused by almost any station in the line. In this short period of time, no causes for downtimes are recorded – only the disturbances are fixed – and in most cases, they are not additionally explained. However, Unilever aims at reducing these short downtimes and tackling them in a targeted manner. This is only possible if we know the causes of disturbances. Therefore, we need to get the information from the controls," Heiko Schnepf explains.

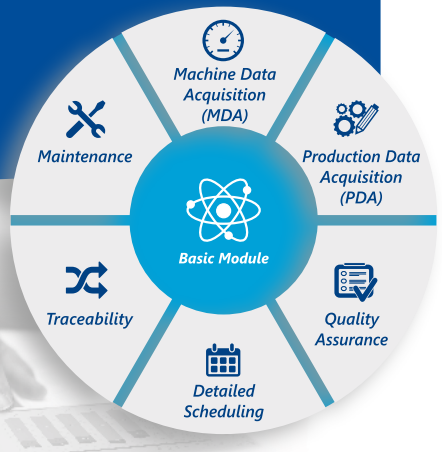
Because the data from the machine control are not read out yet, it is the task of the machine operators to record every short downtime using free text entries later on. This effort is soon to be a thing of the past, as soon as more detailed information can be read out via the controls using an OPC interface. This step is now being implemented in a pilot project.

Future Prospects

"The MDA module is our basic tool for determining losses in packaging lines, and thus it is an essential tool for our production. Still – or perhaps for that very reason – we constantly come up with new functional extensions, which leads to a continuous collaboration with FASTEC. There will certainly be more projects to come," Gerhard Weinert sums up.

Overview:

- Industry: Food industry
- Aim: Monitoring and optimizing packaging lines
- In use: MES solution FASTEC 4 PRO including the modules
  - Machine data acquisition
  - Monitoring
  - Process messages
- Interfaces:
  - Warehouse management system
  - Inline-Printing-System
  - SAP



Continuous Expansion

Why Not Get to Know Us Personally?

Production companies must produce on time, in a traceable, flexible and customer-specific manner, while ensuring consistently high quality. Achieving these goals requires transparency through real-time information, good planning and quick and adequate reactions to deviations. Our Manufacturing Execution System (MES) FASTEC 4 PRO is the right tool for this purpose. With great success since 1995.

With FASTEC 4 PRO, you gain the necessary level of transparency in all areas of production in real time, enabling you to discover previously unused potential for increasing productivity and optimizing processes.
Thanks to targeted planning, you can also respond to short-term requirements from sales and efficiently design production processes – traceable and documented.

We would also like to give you a good advice personally!

Our sales department will be happy to provide you with further user reports and information material! Or else, make an appointment with our sales department for a presentation at your location, in our company or via web. Of course, you can also experience FASTEC 4 PRO live and on site with our customers.
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Additionally, we offer videos of our software and customer solutions in our YouTube channel:
www.youtube.com/FASTECGmbH

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Gold Microsoft Partner
Microsoft

SAP Silver Partner

FASTEC 4 PRO

- Get transparent data in real time
- Reduce production costs
- Detect and eliminate weak points
- Develop high productivity potentials
- Benefit from the continuous flow of information
- Use available resources efficiently

As a data hub, FASTEC 4 PRO is essential on the way to the Smart Factory.